

**REMARKS**

This Amendment and Reply seeks to place this application in condition for allowance. In this regard, certain claims have been amended to more clearly describe the invention, to more fully protect the invention, to improve grammar and correct inadvertent typographical errors, and to address the antecedent basis issue raised by the Examiner in the Office Action of February 8, 2005 (hereinafter the "Office Action"). No new matter has been added.

Further, fifteen (15) new device claims have been added to more fully protect the inventions described and illustrated in the application. These claims are fully supported by the specification and are consistent with the election set forth in the Amendment and Reply of December 20, 2004. As such, Applicants' new claims do not adversely impact the election made therein. Moreover, no new matter has been added.

**Office Action of February 8, 2005**

In the Office Action, the Examiner found most of the claims (i.e., claims 38, 39 and 41-64) to contain patentable subject matter. Further, the Examiner raised an antecedent basis concern regarding claim 50. Finally, claims 32-37 and 40 were rejected as being anticipated by Deim et al. All of the objections and rejections raised in the Office Action are addressed below in detail and in the order presented in the Office Action.

**Lack of Antecedent Basis – Objection to Claim 50**

Applicants have amended claim 50 to address the concerns regarding the lack of antecedent basis pertaining to "the vent". Applicants also amended claim 41 to address a similar antecedent basis issue regarding "the vent". The undersigned appreciates the Examiner's thorough review of the claims.

**Rejection of the Claims under 35 USC §102**

In the Office Action, claims 32-37 and 40 were rejected as being anticipated by Diem et al., U.S. Patent 5,576,250 (hereinafter, "Diem"). For at least the reasons set forth below, amended claims 32-37 and 40 are neither anticipated by nor obvious in view of Diem.

Notably, in an effort to present only responsive comments, this discussion focuses exclusively on amended independent claim 32. The reasons set forth below are *not* the only reasons the independent claims (amended claim 50 and new claim 65) are patentable over Diem, either alone or in combination.

Thus, no inference or conclusion should be drawn that Applicants' response to this rejection is exhaustive; rather, for the sake of brevity, the remarks focus on some of the patentable aspects of certain claims.

**Diem et al. (U.S. Patent 5,576,250)**

Diem describes a microelectromechanical device (i.e., an accelerometer) and technique for fabricating a microelectromechanical device. The Diem accelerometer includes a plurality of moveable electrodes and a plurality of fixed electrodes. (See, for example, Figures 1, 2 and 10, and Col. 8, lines 14-65 and Col. 13, lines 8-39). The fixed electrodes 18a and 18b) are formed from conductive silicon 36. (Figures 10, 16A and 16B, and Col. 13, lines 21-53). The fixed electrodes 18a and 18b are formed on insulating layer 60 (silicon nitride or silicon oxynitride) via growing or depositing a conductive silicon thereon. (Figures 10, 16B, Col. 13, lines 26-27 and lines 36-52). The insulating layer 60 is deposited between silicon film 32 and silicon film 36 in order to electrically insulate the

conductive substrate 8 and silicon film 32 from the electrodes 18a and 18b (which are formed from silicon film 36). (Col. 13, lines 31-33, lines 36-39 and Figures 10 and 16B).

### **Claimed Invention**

There are many inventions described in the instant application. In an effort to present more responsive remarks and a more concise response, the discussion below focuses on only certain aspects or features of the rejected independent claim, as amended. Again, this response is not exhaustive; however, for the sake of brevity, these remarks focus on only some of the patentable features of amended independent claim 32.

### Independent Claim 32

Independent claim 32, as amended, describes an electromechanical device (i.e., a microelectromechanical or a nanoelectromechanical device) including a substrate, an insulation layer disposed on the substrate, a first semiconductor layer disposed on or above the insulation layer and an anchor that is disposed in an opening in the insulation layer and the first semiconductor layer. The anchor contacts the substrate, wherein the anchor includes a material that is different from the insulation layer.

The device further includes a second semiconductor layer, disposed on the anchor and on the first semiconductor layer. A fixed electrode is formed, in part, from the first and second semiconductor layers, and is affixed to the substrate via the anchor.

Thus, amended claim 32 recites, among other things, that (1) the second semiconductor layer is disposed on the anchor and on the first semiconductor layer and (2) the fixed electrode is formed in part from the first and second semiconductor layers and is affixed to the substrate via the anchor.

**Diem Does NOT Anticipate or Render  
Obvious the Invention of Amended Claim 32**

Simply put, Diem neither anticipates nor renders obvious the invention of amended claim 32. In this regard, the Diem microelectromechanical device, among other things, does not teach or suggest a fixed electrode, formed in part from the first and second semiconductor layers, which is affixed to the substrate via the anchor – wherein the anchor, which includes a material that is different from the insulation layer, is disposed in an opening in the insulation layer and first semiconductor layer, and contacts the substrate.

As mentioned above, fixed electrodes 18a and 18b of the Diem device are formed from conductive silicon 36, which is deposited on insulating layer 60<sup>1</sup>. (Diem, Figures 10, 16A and 16B, and Col. 13, lines 36-52). The insulating layer 60 electrically insulates the conductive substrate 8 and silicon film 32 from the electrodes 18a and 18b (and contact 25). (See, Diem, Figures 10 and 16B, and Col. 13, lines 30-33). Thus, fixed electrodes 18a and 18b are not formed, in part, from first and second semiconductor layers – as recited in amended claim 32. Rather, fixed electrodes 18a and 18b of Diem are formed only from silicon film 36 – and not from silicon film 32.

Moreover, there is no suggestion or motivation to form fixed electrodes 18a and 18b of Diem from first and second semiconductor layers while maintaining the anchoring structure allegedly provided by insulating layer 60. Indeed, Diem teaches away from the invention of amended claim 32 in that insulating layer 60 is dimensioned "in order to electrically insulate" electrodes 18a and 18b (formed from conductive silicon 36) from the

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<sup>1</sup> For the purposes of this Response, Applicants accept, as correct, that patterned layer 60 is an anchor for fixed electrodes 18a and 18b ("... an anchor 60 that is disposed in an opening in the insulation layer and first semiconductor layer and contacts the substrate, wherein the anchor includes a material ... that is different from the insulation layer ....")(Office Action, page 2, 3rd paragraph) as described in claims 32, 50 and 65.

conductive substrate 8 and silicon film 32 (the first semiconductor layer). (Diem, Col. 13, lines 30-33). As such, fixed electrodes 18a and 18b of Diem are formed from silicon film 36 – and not from silicon film 32.

#### **Dependent Claims**

As mentioned above, for the sake of brevity, this response neither presents the additional reasons/bases that the rejected dependent claims are patentable over Diem nor addresses the Examiner's comments regarding the subject matter contained in the dependent claims. The reasons/bases such claims are patentable are numerous. For at least the reasons stated above, however, it is respectfully submitted that the rejected dependent claims are patentable in view of Diem, either alone or in combination.

#### **Allowable Subject Matter**

Claims 38, 39 and 41-49, which depend from amended independent claim 32, have been found to contain allowable subject matter but were objected to as being dependent upon a rejected base claim. (Office Action, page 4). In view of the remarks above, Applicants respectfully submit that these claims are allowable without more.

Further, the Examiner found original claims 50-64 to contain allowable subject matter. (Office Action, pages 1, 2 and 5). Applicants note what may be interpreted as a statement of reasons for the indication of allowable subject matter. (Office Action, page 5). If so, the Examiner's statement should not be interpreted as being exhaustive. Although Applicants agree with the Examiner's conclusion that the inventions are patentable over the prior art, as described in the instant application, there are many inventions described and illustrated therein. Indeed, other inventions described and illustrated in the application may or may not include one, some or all of the features set forth in the Examiner's statement.

**Newly Submitted Claims**

Newly submitted claims 65-79 are allowable for the same reasons amended claim 32 and original claim 50 are patentable over Diem. In this regard, new independent claim 65 includes many of the features of amended claim 32 and many of the features of claim 50. As mentioned above, original claim 50 was deemed to recite allowable subject matter.

**Information Disclosure Statements**

Applicants appreciate the Examiner's review of the art presented in the Information Disclosure Statements (IDS) submitted to date.

**Sixth Information Disclosure Statement**

Applicants have submitted, in a separate correspondence filed on March 3, 2005, a Sixth IDS. A copy of the Sixth IDS (including Form PTO-1449) is attached hereto. It is respectfully requested that the Examiner make his consideration of the reference identified in the Sixth IDS formally of record with the next action.

**Seventh Information Disclosure Statement**

Applicants have also submitted, in a separate correspondence filed on March 25, 2005, a Seventh IDS. A copy of the Seventh IDS (including Form PTO-1449) is attached hereto. It is respectfully requested that the Examiner make his consideration of the reference identified in the Seventh IDS formally of record with the next action.

**CONCLUSION**

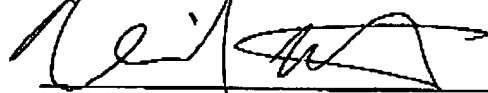
Applicants respectfully request entry of the foregoing amendments and reconsideration of the instant application. Applicants submit that all of the pending claims

present patentable subject matter. Accordingly, allowance of all of the claims is respectfully requested.

Notably, should a telephone interview expedite the prosecution of this application, the Examiner is invited to contact the undersigned at the telephone number listed below.

Date: March 25, 2005

Respectfully submitted,



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